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ABSTRACT

This publication summarizes information provided during 1995 and early 1996 in an informal survey of state and land-grant universities concerning the direct and long-range economic impacts of public universities on their immediate communities. Items considered under direct impact include: expenditures by the universities on supplies, materials, equipment, acquisition, maintenance, construction and rehabilitation; student spending for off-campus housing, transportation, books, clothing, laundry, and other living expenses; employee spending; visitor spending by parents and others who visited campuses for athletic events, conferences, commencements, or other special events; jobs, including university employees and jobs created by university spending; tax revenue; and out-of-state revenues, including research grants and student assistance. Items considered under long-term impact include fostering new business and creating new jobs; promoting innovation; enhancing the work force; improving the quality of life; and public service, such as outreach programs that help solve social problems. The report concludes that state and land-grant institutions have been successful in using state funding as seed money to generate jobs and other revenue. Most of the document presents detailed data on direct and long-term benefits for specific institutions in the Northeast (12), Southeast (15), Midwest (14), and West (14). A list of supplementary reports concerning individual universities is also included. (CK)

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For Every Dollar Invested...

the economic impact of public universities

ED 398 842

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Editor's note:

This publication is a first-time report based on information collected at NASULGC by the Office of Public Affairs and the Office of Federal Relations—Higher Education in an informal survey of member universities in 1995 and early 1996. It should not be seen as a comprehensive listing, but simply a first step toward compiling some economic impact information from a wide range of public universities. We hope to present supplements to this report as additional information becomes available to us, and we want to thank the many university relations and federal relations officers and others who responded to our requests for information.

It should be noted that universities continue to gather information about their economic impacts and regularly make new data available. Therefore, NASULGC plans to create an online version which will be available on the NASULGC web site early next year.

For a copy of a report mentioned in this publication, please contact the university directly.

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FOR EVERY DOLLAR INVESTED . . .

the economic impact of public universities

By educating students, supporting basic and applied research, and sustaining community outreach and public service, America's state universities and land-grant colleges have always provided critically important benefits both to states that fund them and to the nation as a whole. Some of these benefits—lives ennobled by exposure to the arts, improvements to society made by people using what they've learned, current applications of a research breakthrough made ten years ago, etc.—are hard to measure in dollars and cents. But others show quite clearly that public higher education is an invaluable investment, an investment that typically yields two, three or more dollars for every state dollar spent.

Costs *and* Benefits

During the last decade, however, these benefits often have been overlooked as parents faced with rising tuition bills and legislators and governors looking for ways to cut state spending have put the costs of public higher education in the spotlight. State universities and land-grant colleges have responded. First, they have instituted reforms and made painful budget and personnel cuts to reduce costs and slow tuition increases significantly. Thanks to these efforts, the rise in tuition has dropped steadily in each of the last four years. This slow down is especially impressive because it has taken place at a time when state legislatures have been slashing support for higher education, forcing universities to rely more heavily on tuition and other sources of revenue.

Moreover, public colleges and universities have renewed their efforts to provide state officials, parents, and taxpayers a full picture of the costs *and* benefits of higher education. To do so, they have gathered and made available information about how each dollar invested in institutions of higher education impacts the economies of the local communities, regions, and states.

Different Ways of Viewing Universities' Economic Impact

This publication brings together some of the recent information state and land-grant universities have collected in what are often called economic impact statements. These reports present the benefits of a state or land-grant university in clear dollars-and-cents terms. Because universities are continuing to develop and refine their analyses, this NASULGC publication should be considered an interim report rather than a final document. As such, it presents a snapshot of key findings by universities and an overview on how different institutions are attempting to determine their economic impact.

In developing information about the economic benefits they provide, universities take somewhat different approaches. Some look at one campus' economic impact on the local city or region, while most look at impact of a campus or system on their state. Some analyze the impact of only a certain part of the university, a medical center or academic department. Others look at only one kind of economic impact, for example the impact of technology transfer or basic research. In addition, different econometric models have been employed.

There are, however, important similarities. In general, the studies analyze two categories of economic impact: direct impact and long-range economic impact.

Direct Impact

While the categories used may differ, the direct impact usually includes items such as

- **Expenditures by the university**: spending on supplies, materials, equipment, acquisition, maintenance, etc., as well as capital improvements, such as spending on construction and rehabilitation.

  EXAMPLE: In 1993–1994, the University of California system spent $2.8 billion on goods and services.

- **Student spending**, expenditures for off-campus housing, food, transportation, books, clothing, laundry, and other living expenses.

  EXAMPLE: In fiscal year 1992, students at Ohio's public universities spent some $1.3 billion on off-campus expenses.

- **Employee spending**, the amount of money university employees had available to spend after taxes and other deductions.

- **Visitor spending**, the money spent by parents and others who visited campuses for athletic events, conferences, commencements, or other special events.

  EXAMPLE: Approximately $10.4 billion of New York State's economy was a direct result of spending by State University of New York's employees, students and visitors.

- **Jobs**, which includes university employees, as well as jobs created by university spending.

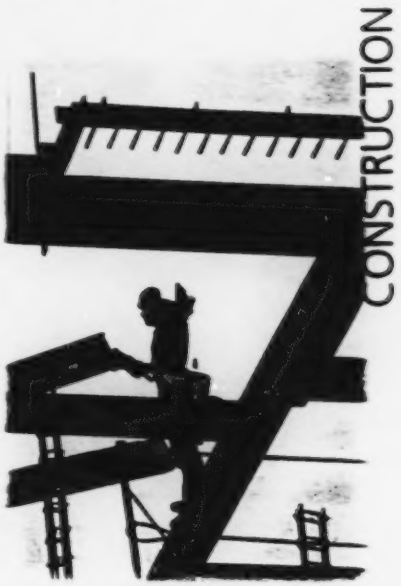
  EXAMPLE: Indiana University's eight campuses employed more than 16,000 people making the university system the state's fifth largest employer.

- **Tax revenue**, the state and local taxes paid by the public university's employees, students and visitors.

  EXAMPLE: Oklahoma's public institutions of higher education generated an estimated $109.1 million in state tax revenues in 1992–1993, including $60.3 million in personal income tax, $35 million in sales taxes, and $13.8 million in excise taxes.

- **Out-of-state revenues**, including dollars that enter the state through federal support for research grants and student assistance, as well as spending by out-of state students on everything from tuition and fees to food, housing and entertainment.

  EXAMPLE: The University of Texas System brought in $659 million in research and development funding from the federal government and other outside sources.



Long-Term Impact

In evaluating their long-term economic impact on their states or communities, universities have provided rich data on a range of benefits, including:

- **Fostering new business and creating new jobs.** A range of university services promote the creation and growth of local businesses.

EXAMPLE: Over the past eight years about 60 new Massachusetts companies were founded based on patents from Massachusetts Institute of Technology (MIT). They have a market value of about $2.5 billion and have created more than 2,000 new high-tech jobs.

- **Promoting innovation.** Universities promote economic growth by encouraging the transfer of their research results to industry.

  EXAMPLE: Kansas State University's research on red meat processing has increased the value of Kansas meat products by $210 million annually.

- **Enhancing the work force.** A university education makes it possible for men and women to get higher paying jobs and contribute more to the economy.

  EXAMPLE: Western Michigan University graduates contribute to the prosperity of the region and state by generating a higher income potential than their counterparts who only finish high school—each one earning from $415,000 to $724,000 more in lifetime income.

- **Improving the quality of life.** State universities and land-grant colleges have a range of programs that contribute to the long-term economic growth of their communities by making them a better place to live.

  EXAMPLE: Botanists in the University of Wisconsin's College of Letters and Sciences are researching the ecology of groundlayer vegetation in Wisconsin's oak savannas. Their results are aiding efforts to restore and manage these imperiled ecosystems in Wisconsin and throughout the Midwest.

- **Public service.** Outreach programs at state and land-grant institutions help communities solve social problems.

  EXAMPLE: Colorado State University's Community Service Office connects 6,000 students with volunteer and service-learning positions throughout the community to meet the real needs of the community while providing learning experiences for participating students.

ATHLETICS

Higher Education: A High Yield Investment

There is still much research to be done on the impact to the nation as a whole of state colleges and land-grant universities. But some clear impressions emerge from reading the economic impact statements assembled here.

- **State and land-grant institutions have been very successful in using state funding as seed money to generate other revenue.** State universities and land-grant colleges typically raise many more dollars from outside sources than they do from their states. For example, for every one dollar the states of Ohio, California, Indiana and Colorado invest in their public institutions of higher education, those states' public colleges and universities raise another $2.50 to $3.50 from other sources. In fact, while this has been occurring, the percentage of university budgets funded by the states has fallen, dropping from 46 percent in 1980–81 to 37 percent in 1992–93.

- **Colleges and universities are a major source of jobs.** State and land-grant institutions employ tens of thousands of people directly and generate additional jobs in their states and communities indirectly through their spending. In many cases, they are one of the largest employers in the state.

- **State and land-grant institutions multiply the effect of state dollars.** Universities' economic impact statements show that across the country, every state dollar invested in public higher education generates many more dollars in economic activity in that state or region. For example, every dollar spent at a Texas public university generated almost three dollars in direct and long-term economic activity. Every dollar of state support for higher education in Kentucky resulted in $3.40 of total spending in the state's economy. Kent State University's spending activities generates over nine times the amount of the state's investment in the university, while Kansas State University's annual impact on the Kansas economy is more than 10 times the amount of the state's investment.

Public Higher Education: A Powerful Economic Engine

At a time when the public is concerned about the costs of higher education, public universities are bringing costs under control and continuing to generate economic benefits for their states and communities. State and land-grant universities are a powerful engine for economic growth. They generate jobs, help create and grow businesses, yield large tax revenues, produce research breakthroughs that spur new industries, and multiply state funds many times over to stimulate regional and state economic activity.

These economic dividends make public spending on higher education an extraordinarily productive investment in the future.

THE NORTHEAST

UNIVERSITY AT ALBANY, SUNY

The University at Albany is a major economic partner in New York State's Capital Region, generating approximately $4 billion in economic activity in the Region during the decade of the 1990s.

Direct Economic Impacts in the 1990s

- $2 billion in wages and salaries paid to 4560 faculty and staff re-spent in the Capital Region;
- Students spending $1.3 billion on food, housing, clothing, etc.;
- University purchases of $600 million in goods and services in the Region;
- Visitors spend $72 million on hotels, restaurants, stores, etc.

Long-Term Economic Impacts

- The University of Albany provides the region with long-term benefits through its distinguished research faculty. The campus now administers over 850 grants and contracts with a total value exceeding $150 million. Throughout the 1990s research activities are expected to bring in over $400 million and provide additional employment and business opportunities for the region.

For more information see *University At Albany—A $4 Billion Economic Engine*

UNIVERSITY OF MARYLAND AT COLLEGE PARK

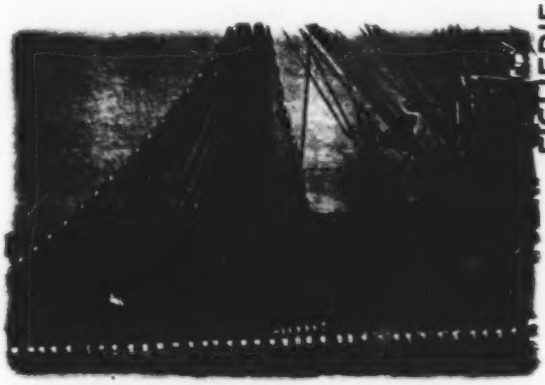
The Montgomery-Prince George's CEO Roundtable has long believed that the University of Maryland at College Park is an integral factor in the economic vitality of the state of Maryland. The university is one of the area's largest employers and purchasers of goods and services.

Direct Economic Impacts in 1993

- The university is responsible for a total of $1.7 billion in Maryland's economy or close to 2 percent of the state's gross domestic product;
- This represents an eight-fold return on the state's investment of $217 million;
- The university employs 9,400 full- and part-time employees;
- 300,000 visitors to the university spent a total of $19.8 million.

Long-Term Economic Benefits

- The university has unique facilities, research centers, and institutes that attract new research projects and funding as well as providing expanded knowledge in business, science, and technology;
- The university's faculty and research facilities are a magnet for new businesses and organizations to the Washington-Baltimore area. For example, the National Archives cited the academic resources of College Park as a primary reason for constructing their $205 million National Archives at College Park facility—the largest research archive in the world;



FISHERIES

- The university's Cooperative Extension and the Maryland Agricultural Experiment Station are essential partners in the state's multi-billion dollar agricultural and environmental industries. Regional and county offices touch every sector of the state, contributing research and education in plant disease prevention, Chesapeake Bay water quality, agricultural product diversity and marketing, Chesapeake Bay aquaculture, and natural resource management.

For more information see *A Partner in Maryland's Growth: The Economic Impact of the University of Maryland at College Park.*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Massachusetts Institute of Technology (MIT) is one of the nation's leading institutions of higher learning. Comprised of 6 colleges and an enrollment of 9,790, it directly impacts the economy of both the state of Massachusetts and the city of Cambridge (where its main campus resides).

Direct Economic Impacts

- In fiscal year 1995 MIT initiatives and programs resulted in a $59 million economic contribution to the Cambridge community;
- MIT employs a *Cambridge First Policy*—purchasing an extensive range of goods and services from hundreds of Cambridge companies. In 1995, this policy resulted in over 100,000 purchase transactions with over 700 Cambridge companies amounting to $42 million;
- MIT is Cambridge's third largest taxpayer, generating $3.1 million annually in real estate revenue;
- MIT graduates and professors over the years have started more than 630 Massachusetts companies, which employed 300,000 people in Massachusetts in 1988 (190,000 direct jobs and 110,000 indirect jobs) according to a Bank of Boston study.

Long-Term Economic Impacts

- MIT graduates and professors over the years have started more than 630 Massachusetts companies;
- MIT alumni/ae represent an average of 11 percent of the engineering faculties of the 30 leading engineering schools in the United States;
- MIT receives over 100 U.S. patents every year, licensing more technology than any other American university;
- Over the past eight years, about 60 new Massachusetts companies were founded based on MIT patents. They have a market value of about $2.5 billion and have created more than 2,000 new high-tech jobs;
- Each year MIT has about 400 invention disclosures, seeks patents on about half of them, is granted between 150 and 200 patents, and signs about 100 licensing agreements. Over 50 percent of MIT's licenses go to small U.S. companies.

For more information see MIT Economic Impact Packet, 1995.

STATE UNIVERSITY OF NEW YORK AT BINGHAMTON

As a partner in the future growth and development of New York's Southern Tier, Binghamton University is committed to serving the state and region in seeking effective ways to address the region's economic challenges.

Direct Economic Impacts in 1994

- Through its technological, educational, and cultural resources, Binghamton University's direct economic impact on the local community totals $244 million annually;
- The university spent $154.3 million, and its 12,000 students spent another $31 million locally;
- The university directly employed 3,600 people, in addition to supporting nearly 6,000 other full-time jobs as a result of its economic activity;

- Campus construction projects over the next decade could impact the local economy a total of $146 million and generate an additional 2,200 jobs;
- The university received almost $18 million in government, industry, and foundation grants and contracts that add to the region's employment and economic base.

Long-Term Economic Impacts

Binghamton University is supporting the region through a range of innovative industrial partnerships that have long-term impact to the region. For example:

- The Watson School's Integrated Electronics Engineering Center (IEEC) is supported in part by contributions from major electronics manufacturers like IBM, Martin Marietta, and Universal Instruments Corporation. The Center's leading-edge research benefits large and small corporations in a region where 30,000 manufacturing jobs depend in some way on the electronics industry;
- Binghamton's federally-funded Trade Adjustment Assistance Center has provided more than $45 million in technical assistance to help more than 800 New York businesses survive against competition from imports;
- The University's Strategic Partnership for Industrial Resurgence (SPIR), a cooperative venture among New York engineering schools, is assisting small manufacturers across New York State to develop new products and help defense-related industries diversify.

For more details see Binghamton University's brochure *The Future Starts Here*.

UNIVERSITY OF PITTSBURGH

Founded in 1787, the University of Pittsburgh is one of the oldest institutions of higher education in the United States. With 18 colleges with an enrollment of 26,328, it is also one of the city's and the state's major resources—educationally, culturally and economically.

Economically, the university plays a key role in directly supporting the region and state through its spending practices, its revenue generation for local governments, and its employment of Pennsylvania residents.

Direct Economic Impacts

- The university together with its medical center is the largest employer in the city of Pittsburgh. Approximately 1 out of 17 jobs in Allegheny County can be attributed to the university;
- The university's direct employment and indirect economic influence generated approximately $796 million in personal income for regional residents;
- The university generates approximately $880 million in business volume in Allegheny County.
- The university's presence in the region generated approximately $67 million in revenues for the City of Pittsburgh, Allegheny County, other local municipal governments and the county's public school districts.

Long-Term Economic Impacts

- 58,000 University of Pittsburgh graduates support the local economy by paying taxes, buying houses and goods, and enriching the region's labor force;
- Each year university activities generate hundreds of millions of dollars for the local economy by attracting money from outside the region for research, programs, and events;
- As a major research institution, the university develops technologies and innovations that will sustain the region and the nation in the next century, giving birth to new industries and new fields of studies.

For more information see *A Little Booklet About a Big Community Resource—the University of Pittsburgh*.

RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

Rutgers, The State University of New Jersey, has over 48,000 students and is comprised of 27 degree-granting divisions, including 17 undergraduate colleges and 15 graduate schools. Five are located in Camden, seven in Newark, and 15 in New Brunswick.

Direct Economic Impacts in 1993

- The $308.6 million the state invested in Rutgers was leveraged with other income sources, resulting in $2.06 billion being spent in the New Jersey economy, over five times the state's original investment;
- Less than half of Rutgers' total budget actually came from state funding;
- Over $1.03 billion was pumped directly into the New Jersey economy as a result of the university's spending activities;
- Students spent $273.9 million throughout the state, with visitors to the campus spending an additional $8 million;
- Rutgers employed 8,478 regular faculty and staff, 9,669 students and temporaries, and 3,546 visiting faculty with an additional 7,626 jobs created throughout the state as a result of the university's spending activities;
- University employees paid a total of $21.1 million in sales and income taxes.

Long-Term Economic Impacts

The university's importance to the state's economy extends beyond the economic stimulation effected through the circulation of dollars. Rutgers also expands the economy in the long-term through its efforts in areas that include:

- The university confers approximately 9,000 degrees each year, and the majority of Rutgers graduates stay in New Jersey and contribute to the state's economy;
- The university devotes a significant portion of its yearly budget to extension and public service—in 1993 this amounted to an investment of $28.8 million;
- From 1983 to 1993, the university more than quadrupled its non-state research support from $25.3 million to $113.4 million;
- Through its Office of Corporate Liaison and Technology Transfer, Rutgers has disclosed more than 240 inventions for which more than 70 patents have been granted;
- Rutger's Institute of Marine and Coastal Sciences conducts basic and applied research to maintain New Jersey's important marine and tourism industries while maintaining the state's vital coastal zone and wetland ecology.

For more information see *Return on the Investment: The Economic Benefits of Rutgers University to the Citizens of New Jersey.*

UNIVERSITY AT STONY BROOK

With more than 17,500 students on an 1,100-acre campus; the University at Stony Brook has a major impact on New York's Suffolk County and well beyond.

Direct Economic Impacts, 1993–1994

- Four economic development projects underway at the university have created or saved more than 2400 jobs;
- The $4.8 million that the state of New York has invested in these four programs have attracted $79 million in private investment, a 16:1 return.

Long-Term Economic Impacts

- With the help of the university, companies involved in Stony Brook's economic development efforts will increase their business volume by over $120 million in the near future;
- The university's Biotechnology Center is likely to result in $1.3 billion in manufacturing activities on Long Island.

For more information, see "The Economic Impact of Stony Brook University," Center for Regional Policy Studies.

UNIVERSITY OF VERMONT

The University of Vermont includes 11 colleges with an enrollment of 10,230. In fiscal year 1995, the university's direct impact on the state was approximately $155 million via expenditures by the university, faculty, staff, students, and visitors to the campus. In addition, local and state governments received university related revenues (i.e., taxes) of approximately $2.4 million.

For more information see *The University of Vermont—An Estimate of Its Economic Impact on the State of Vermont Fiscal year 1995.*

WEST VIRGINIA STATE COLLEGE

West Virginia State College includes 6 divisions with an enrollment of 4,519. The college's primary service area includes the seven counties of Kanawha, Putnam, Lincoln, Boone, Clay, Roane, and Jackson—collectively known as Kanawha Valley.

Direct Economic Impacts in 1994

- Direct and indirect expenditures by the college had a total monetary impact of $54.2 million;
- The college directly employed 497 people and created an additional 3,720 jobs via expenditures and activities.

For more information see *Impact of West Virginia State College on the Kanawha Valley Economy FY94-95*

GROUPS OF UNIVERSITIES AND UNIVERSITY SYSTEMS

UNIVERSITY OF MARYLAND SYSTEM

The University of Maryland System is a driving force in Maryland's economy.

Direct Economic Impacts in 1992

- The university system returned approximately 28 percent more to Maryland's treasury than it received from the state;
- The University of Maryland System generated $4.6 billion in annual economic activity in the state;
- The system also accounted for $670 million in annual state tax revenues;
- For every $1 the state invests in the university system, the university system generates $7.70 in total economic activity.

For more information see *The Smart Investment: The Economic Value of the University of Maryland System to the State of Maryland*

THE CITY UNIVERSITY OF NEW YORK

The City University of New York (CUNY) comprises ten senior colleges, six community colleges, one technical college, a graduate school, a law school, and an affiliated school of medicine and is the nation's leading urban university. It is also a major force in New York's economy.

Direct Economic Impacts

- Total funds put into New York's economy by CUNY equal $780 million per year;
- CUNY generates $12.1 billion per year in economic activity in New York City and the State—more than nine times the university's budget;
- The total tax revenues directly attributable to CUNY are $401 million per year;
- CUNY's students spend about $950 million each year while in college;
- Over 90 percent of CUNY's 26,170 employees are New York residents, and they spend about $475 million (after taxes) in New York.

Long-Term Economic Impacts

- CUNY graduates stay in New York, support New York's economy, and pay $414 million more in state and city taxes each year than they would have paid if they had not gone to college;
- The average CUNY bachelor degree recipient earns approximately $690,000 more in lifelong earnings than a high school graduate;

- Eleven CUNY alumni have won the Nobel Prize, more than any other public institution of higher learning;
- The Center for Advanced Technology and the University's other research programs receive more than $251 million annually in support from corporations, foundations, and government agencies;
- Through its Workforce Development Initiative, the university is helping New York businesses gain a competitive edge by educating workers to meet crucial labor force needs. It is also studying trends in the job market, developing strategies to create new jobs, and providing the expertise to launch small businesses.

For more information see *The CUNY Economic Advantage: Making Dollars and Sense for New Yorkers*.

STATE UNIVERSITY OF NEW YORK

The State University of New York includes 64 campuses and is one of the nation's most diversified and largest comprehensive public university systems. Through spending, job creation, taxes, and out of state revenues, SUNY provides a range of direct economic benefits to the state of New York.

Direct Economic Impacts in 1994

- The effect of SUNY's spending activities was over 5.1 times the amount of the state's investment in SUNY;
- Approximately $10.4 billion of New York State's economy was a direct result of spending by SUNY, its employees, students, and visitors;
- 80,384 people were employed by SUNY, with an additional 35,106 jobs attributable to SUNY, its direct expenditures or spending on its capital projects;
- $790 million in income, sales, and property taxes to the State of New York was paid by SUNY employees and individuals whose employment was a result of SUNY activities;
- Research and other externally funded programs at SUNY are projected to yield $358 million in expenditures.

Long-Term Economic Impacts

SUNY also provides a wide of long-term economic benefits such as work force development, a higher standard of living, sponsored research and public service. For example:

- People with four or more years of college earn as much as 40 percent more than those with less education and fewer skills. This greater income potential has a substantial impact upon the New York state economy;
- Each year, SUNY graduates add an estimated $16.8 billion to New York's economy through increased personal earning power;
- Since 1987, SUNY's technology transfer program has consistently ranked in the top 20 among research universities nationally, and holds eighth place in issued patents among U.S. universities engaging in significant R&D;
- The New York State Small Business Development Center administered by SUNY has counseled and helped clients acquire $483 million in private and public funding for small businesses.

For more details see *The Economic Impact of the State University of New York on the State of New York (1993–1994)*.

THE SOUTHEAST

THE UNIVERSITY OF ALABAMA

The University of Alabama plays an important role in determining the quality of life for all citizens in the state and particularly for Tuscaloosa County, where its main campus resides. It is not only a center of higher learning, but also a cultural force in the community and, of course, an athletic center. Above all, it presents educational and research opportunities and plays a vital role in the local and state economy.

Direct Economic Impacts in 1989

- The University of Alabama accounted for $429.4 million or approximately 23 percent of Tuscaloosa County's income;
- University-related direct expenditures totaled $238.6 million or 13 percent of Tuscaloosa's income;
- The university employed 5,900 people in full and part-time positions of which 90 percent of these employees maintained their households in Tuscaloosa county;
- Students spent approximately $92.8 million for goods and services in the county with $10.6 million worth of purchases attributable to visitors of the university.

For more information see *The Economic Impact of the University of Alabama on Tuscaloosa County.*

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

The University of Alabama at Birmingham includes 14 colleges with an enrollment of 15,362. The university serves the surrounding communities of Jefferson, Shelby, St. Clair, Blount, and Walker counties and provides them direct economic benefits.

Direct Economic Impacts in 1993

- University faculty and staff expenditures totaled $295 million;
- Student expenditures were approximately $118 million with visitors spending $35.6 million;
- The university employed nearly 73,900 people of which faculty and staff make up approximately 15, 351;
- Revenues to local governments from university-related influences were estimated to be $74 million.

For more information see *University of Alabama at Birmingham's impact on the Birmingham Economy.*

AUBURN UNIVERSITY

Auburn University—including the main campus, AU at Montgomery, the Alabama Agricultural Experiment and the Alabama Cooperative Extension System— is a major economic player and institutional asset in the state of Alabama.

Direct Economic Impacts in 1993–1994

- AU's interaction with Alabama's economy produced an estimated 18,859 jobs, in addition to the 10,408 full- and part-time jobs provided directly by the university;

- The university's in-state expenditures stimulated Alabama's economic output by $940 million.

Long-Term Economic Impacts

- Degrees conferred by the university in 1993–1994 increased the earnings capacity of graduates by $1.3 billion;
- The delivery of university off-campus expertise increased productivity in Alabama's economy by $167 million;
- Overall, Auburn turned a $162 million state appropriation into a $2.4 billion economic boost for the state of Alabama.

For more details see the 1996 report of the campus-wide Economic Impact Committee.

UNIVERSITY OF FLORIDA

The University of Florida has an enrollment of over 37,000 students and is among the ten largest universities in the nation. It is a major center of economic activity for the state of Florida.

Direct Economic Impacts in 1993–1994

- For each dollar the university received in state funding, it generated an additional $3.08 from other sources;
- The university, its related organizations, students, and visitors spent an estimated $1.78 billion in the state of Florida;
- 47,919 jobs in Florida were attributable to the university;
- The university's total economic impact was almost $2.1 billion, more than five times the state investment of $409 billion.

Long-Term Economic Impacts

- In 1993, the university ranked fourth among public and private universities in the number of patents awarded;
- The university has one of the most comprehensive programs in the country, and its relatively low tuition rates make it an exceptionally good buy for students, over 87 percent of whom are Florida residents;
- The university is one of the top research schools in the U.S., ranked 27th among public universities in attracting research dollars in 1992.

For more information see *The Economic Impact of the University of Florida on the State of Florida*.

FLORIDA ATLANTIC UNIVERSITY

The mission of Florida Atlantic University (FAU) is to provide comprehensive educational programs and services to the 2.5 million residents of one of the fastest growing urban regions in the nation, Southeast Florida. In fulfilling its mission, FAU provides its immediate service area and the state with a range of direct economic benefits.

Direct Economic Impacts in 1994

- Employees, students, and visitors spent $368.7 million in Southeast Florida;
- The university directly employed over 2,000 people and created additional jobs for the region as a result of university-related business;
- FAU received approximately $23.2 million in contracts and grants that added to the region's employment and economic base;
- The university initiated $51 million of university related construction projects.

Long-Term Economic Impacts

- Enhancement of economic and quality of life factors in Southeast Florida make the region potentially more attractive to industries and businesses that may wish to relocate;
- FAU contributes to the understanding and solutions of environmental and urban problems through publications and research efforts of the FAU/FIU Joint Center for Environmental and Urban Problems;

- The university provides public service to the community through cultural events, sports events, public speakers bureau, and volunteers on community boards.

For more information see *The Economic Impact of Florida Atlantic University*

GEORGIA STATE UNIVERSITY

Georgia State University's primary aim is to provide quality educational programs and services to the community it serves. It also, however, plays a role in broadening the local social and political environment, as well as providing significant direct economic benefits to the region and state.

Direct Economic Impacts in 1992

- Faculty, administration, staff, and students spent an estimated $189 million in Georgia;
- Georgia State employed 2,257 full-time people and 1,222 part-time people, in addition to generating an additional 1,220 full-time positions in the Atlanta community via university related spending;
- The university spent approximately $40 million in local purchases (Atlanta region).

For more information see *Georgia State University Spending Patterns and the Atlanta Economy, an Updated Estimate for 1992*

UNIVERSITY OF LOUISVILLE

The University of Louisville includes 7 colleges with an enrollment of 20,721. Locally and regionally the university reaches out to the publics its serves in numerous and innovative ways.

Direct Economic Impacts

- The university spends $335 million annually for goods and services throughout the state;
- The university employs over 4,000 faculty and staff, making it one of Louisville's top ten employers;
- The university pays more than $3 million annually in local and state income taxes.

Long-Term Economic Impacts

- The university generates additional income and job opportunities for the state via external research grants and contracts;
- It prepares its students for future jobs with programs such as the Speed Scientific School;
- The University of Louisville provides advanced education to many first generation college students and is on the front line of changing job and life opportunities for thousands of residents each year.

For more information see *University of Louisville Impact on Economic Development*

MISSISSIPPI STATE UNIVERSITY

From its beginning more than a century ago, Mississippi State University has served the state and its people through high quality programs of instruction, research, and service. It supports the social and industrial growth of the state and the region it serves and directly impacts its economic development.

Direct Economic Impacts in 1993

- For each $1 invested in Mississippi State University by the state of Mississippi, the university obtained an additional $1.63 from other sources such as gifts, research grants and contracts;
- Mississippi State University's total economic impact was an estimated $506.2 million of which $283.4 million was the result of direct spending;
- University students alone spent an estimated $48.6 million, and visitors to the university spent at least $20.4 million;
- At least 12,893 state jobs result from economic activity associated with the university. An additional 5,352 jobs result from revenues brought into the state by the university;
- Tax revenue to the state resulting from the university's activities total at least $21.6 million in the form of income and sales taxes alone;

- At least $133.8 million in increased economic activity in Mississippi is due to out-of-state revenues attracted by the university.

Long-Term Economic Impacts

- The university's PRO-MISS program utilizes faculty and staff to conduct training of groups of citizens from several counties each year. The training includes all elements relevant to those involved in local economic planning and development.
- The university's Community and Economic Development Center and the Center for Small Town Research and Design provide guidance for development of community improvement strategies as well as research and assistance to towns developing or implementing community improvement initiatives.
- The university's Engineering and Industrial Research Station provides research and testing for both industry and government, thus directly transferring such research into applications that improve industrial growth within the state.

For more information see *A Report on the Economic Impacts of Mississippi State University*.

UNIVERSITY OF NEW ORLEANS

The University of New Orleans includes 9 colleges with an enrollment of 15,239.

Direct Economic Impacts in 1995

- University spending activities totaled $271.5 million;
- University direct and secondary employment was 3,310 people.

Long-Term Economic Impacts

The University's Division of Business and Economic Research supports a range of research and special projects that will provide the state of Louisiana and the New Orleans metropolitan area with future economic development venues. The benefits of these activities are long-term and include projects such as:

- Developing "MetroVision," a comprehensive strategic plan for economic development in the New Orleans area. This plan, which is the first of its kind locally, is currently in implementation;
- Developing the New Orleans Metropolitan Area Economic Database and UNO Economic Analysis Forecasting Model. These efforts have proved to be a valuable resource to the local governmental and business communities, allowing them to properly assess the New Orleans area economic performance.

For more information see *University of New Orleans Division of Business and Economic Research Public Service Activities Since 1991*.

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

The University of North Carolina at Greensboro (UNCG) consists of six professional schools, the Graduate School and the College of Arts and Sciences with a student body of 12,177. Through its spending, job creation, and tax revenues, the university provides direct economic impacts to not only its immediate service area of the Piedmont Triad region, but also the state at large.

Direct Economic Impact in 1993

- UNCG spending, including faculty/staff, students, and visitors, totaled $166 million;
- UNGC employed 1,738 people full-time and generated additional jobs via expenditures and projects throughout the state;
- $16.5 million in income, sales, and property taxes to the state and local governments were paid by UNGC employees and individuals whose employment was a result of UNCG activities.

Long-Term Economic Impacts

In the long-term, UNCG graduates (of which approximately 40 percent stay in the Triad area and 80 percent stay in North Carolina) provide the region and the state with a workforce that has on average a higher earning income potential. An educated workforce helps build a stronger economy for the region and the state.

For more information see *The University of North Carolina at Greensboro—Economic Impact: UNCG and the Triad.*

NORTH CAROLINA STATE UNIVERSITY

North Carolina State is one of three universities that define the renowned Research Triangle—home to many public and private research centers of national and international distinction. As the area's major land-grant university, North Carolina State makes direct and long-term contributions to the economic progress of the community, region, and state.

Direct Economic Impacts in 1993

- The effect of North Carolina State's actual spending was 3 times the amount of the state investment;
- Approximately $750 million was spent by the university, its employees, students, and visitors;
- $15.9 million alone was the result of student spending with approximately $15.1 million the result of visitor spending;
- North Carolina State employed more than 13,200 making it one of the largest employers in the state.

Long-Term Economic Impacts

- Research at North Carolina State is among North Carolina's most powerful magnets for international recognition, attracting over $200 million annually;
- Research efforts at the university have yielded far reaching accomplishments, such as saving the textile industry more than $25 million annually through improvements to the manufacturing process using infrared technology;
- The university's Industrial Extension services provide engineering and industrial management assistance to businesses—in 1993 clients reported a gain of $104 million as a direct result of the program.

For more information see *The Impact of North Carolina State University on the State of North Carolina.*

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Virginia Tech is the commonwealth's largest university and land-grant institution. As such it plays a major role in fueling the regional and state economy. The university and its related organizations spend hundreds of millions of dollars and employ thousands of people throughout the region. In turn, the expenditures of Virginia Tech and those of its employees, students, and related organizations have a multiplier effect that creates additional levels of economic activity.

Direct Economic Effects

- The Virginia Tech community (the university, its agencies, faculty and staff members, students and visitors) spends about $425 million a year on goods and services in the New River/Roanoke Valleys region;
- In 1990 Virginia Tech was responsible (directly and indirectly) for creating 8,782 jobs in Montgomery County (about 30 percent of the county's employment);
- In 1990 Virginia Tech received approximately $26.7 million in private giving that added to the region's employment and economic base.

Long-Term Economic Impacts

- Virginia Tech is the state's largest research institution. Its researchers tackle some of today's most pressing problems and are creating innovations that will help drive tomorrow's economy;
- Through its public service program and the Virginia Cooperative Extension, Virginia Tech is working to improve the economic well being and quality of life for all Virginians.

For more information see "Virginia Tech and the Community: A Summary of the University's Economic Effects."

GROUPS OF UNIVERSITIES AND UNIVERSITY SYSTEMS

COMMONWEALTH OF VIRGINIA ACADEMIC HEALTH CENTERS

As leaders in advanced specialty care, health sciences research and education, Virginia's three academic health centers—Eastern Virginia Medical School-Norfolk; Medical College of Virginia; Virginia Commonwealth University-Richmond; University of Virginia Health Sciences Center-Charlottesville—are well-known as vital contributors to the physical well-being of the Commonwealth's citizens. Few, however, understand the magnitude of these institution's impact on the state's economic well being.

Direct Economic Impact

- $2.7 billion is contributed annually by Virginia's academic health centers to the state's economy representing a full 1.2 percent of the entire business volume in the state;
- As the largest non-state government employer, Virginia's academic health centers provide 58,000 direct and indirect jobs. One in every 46 jobs in Virginia is provided by one of its three academic health centers;
- For every $1 spent by the academic health centers, an additional $1.30 is generated into the Virginia economy;
- $116 million in tax revenues are generated by the operations of Virginia's academic health centers;
- Visitors to the three academic health centers bring $103.8 million into the Virginia economy.

Long-Term Economic Impacts

- Biomedical research at the state's academic health centers has contributed to roughly 20 percent of Virginia's biomedical and biotechnology companies in their business formation and product development;
- Virginia ranks 12th in the nation for National Institutes of Health funding awards;
- In 1995, biomedical research conducted at Virginia's three academic health centers brought in over $160 million in research funds.

For more information see "Academic Health Centers in the Commonwealth of Virginia."

UNIVERSITY OF KENTUCKY

The University of Kentucky comprises eight public institutions of higher education with a total enrollment of 106,254. In fiscal year 1991–1992, the university system had significant direct economic benefits to the state's economy.

Direct Economic Impacts

- Each $1 of state support of higher education in Kentucky resulted in $3.40 of total spending in the state economy;
- The $672 million in state appropriations stimulated $2.29 billion in total public and private spending in the state;
- Total employment in the state was 67,862 greater than it would otherwise have been in the absence of state support for higher education;
- The university's $1.56 billion of wages and salaries equaled 3.8 percent of the $40.58 billion of the state's total wages and salaries;

Long-Term Economic Impacts

- Higher education substantially increases a person's life-time earnings. Each year of higher education adds to a person's human capital value in essentially the same way as saving and investing in a long-term bond adds to a person's net worth;
- The human capital value of the persons enrolled in the state's university system was increased by $8.52 billion as a result of adding a year of higher education to their qualifications;
- The state's investment of $672 million in higher education support stimulated an increase of $8.52 billion in human capital wealth in the state.

For more information see *Two Studies: Economic Impact of Public Higher Education in Kentucky*

THE UNIVERSITY OF TENNESSEE

While most people correctly identify the University of Tennessee as an educational institution, it is also a business. With an annual operating budget of more than $1 billion a year, the university plays a significant role in the Tennessee economy.

Direct Economic Impacts

- The university spent more than $877 million in fiscal year 1993; almost 80 percent of it in Tennessee;
- Students at the university spent nearly $306 million at campuses across the state while visitors to the university spent an additional $98 million;
- The university employs 18,096 faculty and staff as well as 7,291 student employees for a total of 25,387. In addition, jobs created outside the university as a result of university spending are estimated at 22,956;
- The return on the state's investment is about $3 for every $1 appropriated by the legislature;
- The university's two hospitals generated a total economic impact of more than $207 million in 1992–1993.

Long-Term Economic Impacts

- Research boosts economic development as research is converted into new products and services. Faculty members who want to, commercialize their research work through the university's Research Corp. The Research Corp. received $5.5 million in royalties in the last 10 years, and $2.7 million has been passed along to inventors;
- The university's Institute of Agriculture literally spans the state, with extension offices in each of the 95 counties, 11 experiment stations, colleges of agricultural sciences and natural resources and of veterinary medicine in Knoxville, an arboretum in Oak Ridge, and four 4-H centers;
- The university's Center for Industrial Services helps Tennessee businesses and industries obtain federal contracts. In the past seven years, the Procurement Technical Assistance Program, which is funded through a contract with the Department of Defense, helped Tennessee industries obtain $405 million in prime and subcontracts.

For more information see *Growing the State Economy—The University of Tennessee's Economic Impact on Tennessee*

THE MIDWEST

KANSAS STATE UNIVERSITY

Kansas State University (KSU) is a comprehensive research university with a student body of nearly 21,000 housed in nine colleges. Through its teaching, research, and extension/service activities, the university is an important direct contributor to the economy of Kansas and the economic well-being of its citizens.

Direct Economic Impacts

- The effect of KSU's annual impact on the economy of Kansas is more than 10 times the amount of the state's investment;
- In 1993, annual expenditures associated with all activities at the university were estimated to be in excess of $350 million.

Long-Term Economic Impacts

KSU's research programs particularly in the area of applied agricultural research will be positively impacting the state's economy for years to come. For example:

- The development of Newton wheat, the first semi-dwarf wheat in Kansas, increased state income by more than $700 million since 1980;
- KSU's research on red meat processing has increased the value of Kansas meat products by $210 million annually;
- KSU researchers have developed electronic livestock identification systems and detection systems for viral and microbial pathogens that will save $6 to $7 million each year;
- Researchers at KSU developed a Hybrid Circuit Power Switch that is being marketed nationally and is expected to yield sales of $1.3 million annually in three years.

For more information see *Kansas State University 1995 Economic Impact Report*.

AGRICULTURE

KENT STATE UNIVERSITY

Kent State University includes 8 colleges with an enrollment of 21,413. Through spending, jobs, taxes, out-of-state revenues, and credit, the university has significant direct impacts on the local and state economies of Ohio.

Direct Economic Impacts in 1992

- The effect of Kent State University's spending activities was over 9 times the amount of the state's investment in the university;
- For every $1 the State of Ohio invested in the university, Kent State generated an additional $2.07 for its operating expenses from other sources such as private gifts, grants and contracts;
- Kent State University employees, students, and visitors spent an estimated $800 million;
- 3,000 jobs for Ohioans were attributable to the university, with an estimated 1,012 additional jobs generated by the university's spending on capital projects;
- $6.1 million in state income and sales taxes were paid by university employees as well as $2.5 million in city/local income taxes.

Long-Term Economic Impacts

- With 73,642 alumni residing in Ohio, the university is a major provider of the state's college-educated workforce;
- University graduates residing in Ohio add nearly $1 billion to Ohio's economy and tax base annually;
- The university's research programs, such as the Glenn H. Brown Liquid Crystal Institute, generate new economic opportunities for Ohio by developing innovative technologies and products that could lead to new industrial bases for the state.

For more information see *An Economic Impact Statement Ohio's Education Portfolio—Kent State University*

UNIVERSITY OF MICHIGAN

The University of Michigan is committed to serving the state and region in seeking effective ways to address the region's economic challenges. Through its technological, educational, and cultural resources, the University of Michigan contributes significantly to the economic well being of the region and the state.

Direct Economic Impacts

- The university employs over 27,000 Washtenaw County residents, over 10 percent of the entire county workforce; annual payroll is $900 million;
- Received $270 million in federal research dollars with an additional $120 million from private companies and foundations;
- In FY 1995, the university spent $85 million in Washtenaw County alone;
- Students spend an estimated $50 million annually in the region;
- Visitors to the university spend approximately $2.2 million in the local economy;
- Construction and reconstruction activities have generated and additional $300 million into the economy;
- Property taxes paid by the university exceed $150,000 annually.

Long-Term Economic Impacts

- The region's new Material Recovery Facility (MRF) was economically feasible largely because of a joint city and university agreement. The facility recovers recyclable materials from waste. The university sends the majority of its generated waste the center which not only has a positive impact on the environment but will also generate $30,000 annually in the marketing of recyclable materials.
- The university's research efforts in 1995 yielded the awarding of 31 patents to 73 university researchers;
- The university works to facilitate technology transfer—the practical application of its research that is vital to the economic well-being of the state and national economies—through increasing services, streamlining policies, and communicating to key constituencies the critical importance of this activity.

Note this information came from a presentation; hence there is no publication to refer to for more information

UNIVERSITY OF NORTH DAKOTA

The University of North Dakota includes 12 major academic divisions with an enrollment of approximately 13,500 students. The university has a major impact upon the economy of the community and the region.

Direct Economic Impacts in 1992

- Approximately $166.5 million was injected into the state's economy via spending by the university, its employees, students and visitors;
- The university employed a 2,476 full-time and 2,987 part-time in North Dakota.

Long-Term Economic Impacts

The university is developing collaborations and partnerships with business, industry, and government that will support the region and

state's future economic development. These efforts include the development of two world class facilities: The Energy and Environmental Research Center; and The Center for Aerospace Sciences.

For more information see *The Economic Impact of the University of North Dakota*

THE OHIO STATE UNIVERSITY

Teaching, research, and service constitute the cornerstone of Ohio State's strong and growing partnership with the people of Ohio. A benefit of increasing importance to the state's citizens is the positive impact—both direct and long-term—Ohio State has as a generator of economic activity.

Direct Economic Impacts in 1994

- The university, its employees, students and visitors generated about $3.5 billion in economic activity, multiplying the state's $389 million investment nine fold.
- Ohio State students spent about $286 million, with nonresident students spending more than $113 million.
- More than three million OSU visitors contributed almost $78 million to the local economy in 1994, not counting expenditures made to the university.
- For each dollar the state of Ohio invested in Ohio State, the university generated an additional $3.3 dollars for its operating expenses.
- Nearly 41,000 nonstudent jobs for Ohioans were attributable to the university and its direct expenditures.

Long-Term Economic Impacts

- OSU provides more college-educated participants to the Ohio work force than any other institution of higher education;
- The Ohio Agricultural Research and Development Center generates new agricultural knowledge that is shared with the general public and the agribusiness community, yielding significant economic benefits to Ohio's extensive agricultural industry;
- The Ohio State Medical Center delivers advanced healthcare, facilitating and expediting the transfer of basic and clinical research finding to patient care activities. The center also trains healthcare professionals, most of whom stay within the state of Ohio;
- Almost 300 inventions have been disclosed by Ohio State's Office of Technology Transfer Operations over the past five years, yielding over $7.14 million in royalty income. These discoveries are being used to spur the growth of technology-based businesses in Ohio.

For more information, see *The Ohio State University Economic Impact Statement 1995, Investing in Ohio's Economic Future*

OHIO UNIVERSITY

Ohio University includes 13 colleges with an enrollment of 19,461students. Through spending, jobs, taxes, out-of-state revenues, and credit, the university has significant direct impacts on the local and state economies of Ohio.

Direct Economic Impacts in 1992

- The effect of Ohio State University's spending activities was over 8 times the amount of the state's investment in the university;
- For each $1 the State of Ohio invested, the university generated an additional $1.64 for its operating expenses from other sources;
- Ohio University, its employees, students, and visitors spent an estimated $418 million in Ohio;
- Ohio University students alone spent $178.2 million, with visitor spending accounting for $3.8 million to the local economy;
- The university was Athens County's largest employer with 3,914 non-student employees. Ohio University also generated an additional 2,720 jobs through its in-state spending and capital expenditures;
- $6.3 million in income and sales taxes to the State of Ohio were paid by the university's employees with another $1.9 million being paid to city and local income taxes.

Long-Term Economic Impacts

- The university provided Ohioans affordable educational opportunities that will enable them to work productively and compete effectively in an economy that places a premium on high-quality human resources;
- Ohio University graduates residing in Ohio add an estimated $876 million to Ohio's economy and tax base;
- In 1992 the university received $22.2 million in federal support of which $11.5 million was attracted by the university's research and service capabilities;
- The university's technology transfer program and its Institute for Local Government Administration and Rural Development facilitate social, environmental, and economic development in southeastern Ohio by providing technology, information, research, and management/development training to local firms, non-profit organizations, and small-town businesses.

For more information see *An Economic Impact Statement Ohio's Education Portfolio—Ohio University*.

WAYNE STATE UNIVERSITY

Wayne State University, with an enrollment of 32,906, participates heavily in meeting the changing economic needs in both southeast Michigan and the state as a whole.

Direct Economic Impacts

- The university employs some 9,500 people;
- Wayne State maintains a $290 million yearly payroll, including fringe benefits;
- Over the past twelve years, the university has invested more than $230 million in the physical plant;
- The university spends about $144 million for goods and services, mainly from Michigan suppliers.

Long-Term Economic Impacts

- Wayne State has a number of joint programs with business and industry, primarily involving the colleges of business, engineering, education and the College of Urban Labor and Metropolitan Affairs;
- The university has three major research centers directly related to Michigan industries;
- Some 25 percent of all physicians, 23 percent of all nurses, 20 percent of all lawyers, and 29 percent of all social workers practicing in the metropolitan Detroit are in 1992 were Wayne State graduates.

For more information see a report submitted to the Michigan House Higher Education Appropriations Committee in response to written questions on Wayne State University's economic impact.

UNIVERSITY OF WISCONSIN-MADISON

The University of Wisconsin began 150 years ago as a partnership with the state. Its Wisconsin Idea (the philosophical framework for this partnership) has become a national model. Its commitment to the citizens of Wisconsin in continuing this partnership is stronger than ever as the 21st century approaches.

Direct Economic Impacts

- Based on the most recent statistics, the university's direct economic impact on this partnership in 1990 was $3.4 million in direct and indirect spending.

Long-Term Economic Impacts

- Botanists in the university's College of Letters and Sciences are researching the ecology of groundlayer vegetation in Wisconsin's oak savannas. Their results are aiding efforts to restore and manage these imperiled ecosystems in Wisconsin and throughout the Midwest;
- The university's Center on Wisconsin Strategy provides expertise for improving economic performance and living standards in Wisconsin and works with business, labor, and state officials to build the infrastructure needed to

support a high-wage, high-productivity economy in the state;

- Researchers at the College of Agriculture and Life Sciences have found a way to reduce the amount of feed needed to grow animals. The researchers estimate that Wisconsin's poultry industry could save $1 million each year in production costs, and foresee much larger savings for the cattle and swine industries.

For more information see *The University in Partnership with Wisconsin—Building on a Tradition of Excellence Part II*

WESTERN MICHIGAN UNIVERSITY

Western Michigan University has a total enrollment of 26,537. Its main campus in Kalamazoo and six regional centers make it the state's second largest off-campus education program. In fiscal year 1994 the university's economic impact on the local region totaled more than $414 million via its spending and employment activities.

Direct Economic Impacts

- The university is the third largest employer in Kalamazoo County, with 2.6 percent of total employment;
- For every dollar paid by the university in wages and salaries, there was an increase of $2 in personal income in Kalamazoo County;
- The additional tax revenues and export-based proceeds of the university resulted in a 7.3 percent rate of return on the state's investment in the university.

Long-Term Economic Impacts

- University graduates contribute to the prosperity of the region and state by generating a higher income potential then their counterparts who only finish high school—each Western Michigan graduate earning from $415,000 to $724,000 more in lifetime income;
- The university has the largest number of undergraduate students from other countries and one of the largest percentages of international students of any public university in Michigan. Its linkages with more than 40 universities and agencies in 20 countries make it a truly global educational community;
- Through its Unified Clinics, the university is a full partner in providing high quality health care to the Southwest Michigan community, including those less able to pay for services.

For more information see *Western Michigan University—Economic Impact Report: A Matter of Quality*

GROUPS OF UNIVERSITIES AND UNIVERSITY SYSTEMS

INDIANA UNIVERSITY

Indiana University includes 8 campuses with an enrollment of nearly 93,000 and is one of the oldest state universities in the Midwest. It is also ranks as one of the largest institutions of higher education in the United States. As such, Indiana University's faculty, staff, and students contribute daily to Indiana's economic growth.

Direct Economic Impacts in 1993

- For every dollar provided to the university through appropriation, the University has generated $3.01 for its operating expenses from other sources such as research funding, grants, and contracts;
- Indiana University employees, students, and visitors spend an estimated $630 million annually;
- Indiana University employed more than 16,000 people and was the state's fifth-largest employer;
- The University brought in approximately $52 million to Monroe County through visitor expenditures;
- Indiana University received $179 million in external funding for research on its campuses.

Long-Term Economic Impacts

- Work by the professors at the University's School of Public and Environmental Affairs on the potential impact of global warming on the economy of the Great Lakes region will allow regional planners and local economic development officials to plan more effectively for the future of the region;
- Indiana businesses owned or operated by Indiana University graduates generate $8.9 billion in sales each year;
- Indiana University's Industrial Research Liaison Program (IRLP) in cooperation with the Small Business Innovation Research Program (SBIR) have helped Indiana companies develop proposals and receive funding for projects such as creating robotics products and developing a computer-based radiology system to aid in the diagnosis of breast cancer.

For more information see *The Economic Impact of Indiana University on the State of Indiana*

UNIVERSITY OF MISSOURI SYSTEM

As the state's only public research university, the University of Missouri has an obligation to respond to student needs and also to serve the economic needs of the state.

Direct and Indirect Economic Impacts

- The Missouri Research Park has attracted nearly a dozen corporate tenants who combine production and research in a unique fashion made possible through a partnership forged with the University of Missouri;
- Jobs creation from the Missouri Research Park totaled more than 800 by the end of 1994;
- The University Park, which has recently begun development adjacent to the University of Missouri-Kansas City campus, has the potential economic and fiscal impact of approximately $6.8 billion over the next 15 years.

For more information see *University of Missouri Aids the Missouri Economy*

UNIVERSITY OF NEBRASKA

The University of Nebraska system is comprised of 4 campuses with an enrollment of 49,267.

Direct Economic Impacts in 1994

- The University of Nebraska System generated nearly $3 billion in economic activity-10 times the state's investment in the university system;
- The system generated $925 million in retail and wholesale sales and an additional $345 million in services;
- The university system generated nearly $2 billion in private business transactions in the state;
- The University of Nebraska system provided 20,000 jobs outside the university, in addition to the 15,7000 jobs the university itself provides, for a total of 35,700 jobs for Nebraskans.

Long-Term Economic Impacts

Over the long-term, the university generates millions of dollars in growth and income for the state by supplying intellectual capital—educated people, and applied and basic research—and the tools of innovation in Nebraska's business, medicine, and agriculture.

For more information see *University of Nebraska's Economic Impact Study*

OHIO PUBLIC UNIVERSITIES

Ohio's public universities' and medical colleges' impact on local and state economies results directly from the use of their operating and capital budgets. Therefore, their most immediate economic effects can be seen in jobs, spending, taxes, and out-of-state revenues.

Direct Economic Impacts in 1992

- For every $1 the State of Ohio invested in its institutions of higher education, public colleges and universities generated an additional $2.50 for their operating expenses from other sources such as gifts, reasearch grants and contracts;

- Ohio's universities and medical colleges, their employees, students, and visitors spent an estimated $5.36 billion in Ohio;
- Ohio's university system had 60,600 non-student employees, in addition to creating 52,000 jobs for Ohioans as a direct result of their expenditures;
- Ohio's university system employees paid an estimated $95.7 million in income and sales taxes to the state in addition to another $31.3 million in city and local income taxes;
- Ohio university students spent and estimated $1.3 billion for off campus expenses and visitors to the university system spent $167.4 million in the local economy.

Long-Term Economic Impacts

- Ohio's public universities are major providers of college educated participants for Ohio's workforce, adding a potential $9.1 billion to the state's economy;
- Ohio's public universities generates new economic opportunities for Ohio by creating new ideas, altered processes, and innovative products and technologies;

For more information see *An Economic Impact Statement Ohio's Education Portfolio: A Consolidated Statement—The Public Universities of Ohio*

OKLAHOMA PUBLIC COLLEGES AND UNIVERSITIES

Oklahoma higher education does more than provide instruction to Oklahomans; it also produces thousands of jobs both on- and off-campus and generates millions of dollars through its spending for the state economy.

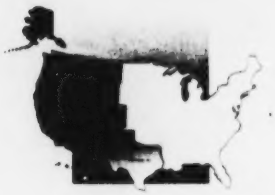
Direct Economic Impacts in 1993

- For each $1 appropriated by the state, Oklahoma higher education generated an additional $1.44 in revenue from other sources such as gifts, research grants and contracts;
- Oklahoma higher education generated more than 82,000 jobs, 6.7 percent of the total number of jobs in Oklahoma;
- Public higher education spent $766.5 million for wages, salaries and benefits for the employees needed to operated the system;
- Student off-campus spending provided an estimated $289 million in wage and salary income, with visitor spending creating an addition $51.5 million of wage and salary income;
- Oklahoma higher education generated an estimated $109.1 million in state tax revenues, including $60.3 million in personal income tax, $35 million in sales taxes, and $13.8 million in excise taxes;
- Non-resident students spent more than $146.6 million in Oklahoma, almost $80 million of that going to off-campus merchants and landlords;
- The federal government paid $82.8 million to Oklahoma's colleges and universities in the form of research grants and appropriated funds, and more than $78 million for student aid.

Long-Term Economic Impacts

- During their lifetimes, students who graduated from and entered Oklahoma's workforce will generate approximately $14.5 billion more in earning than they would if they had not attended college;
- As a result of increased earnings, the state will realize an additional $1.3 billion in state tax revenues over those students lifetime;
- Oklahoma higher education makes its most important contribution to the state's economic development by providing Oklahoma with a well-educated workforce.

For more information see *Oklahoma Higher Education: One of the State's Best Returns on Its Investment*, and *Economic Impacts of Higher Education on the Oklahoma Economy: Final Report to the Oklahoma State Regents for Higher Education*, June 30, 1995



THE WEST

UNIVERSITY OF ALASKA FAIRBANKS

The University of Alaska Fairbanks (UAF) serves 113 communities statewide with an enrollment of 9,274 students and is among the few universities in the nation with land-, sea- and space-grant status. It's direct economic impact on Fairbanks an the state at large is a result of direct expenditures, job creation, and tax revenues.

Direct Economic Impacts

- UAF spends approximately $10 million annually in Fairbanks in direct purchases for the institution and spends another $10 million throughout the state;
- In addition to direct expenditures by the university, employees and students spend approximately $121 million a year in the Fairbanks area and visitors to the university spend approximately $7.3 million;
- The university employs 3,300 people directly and through its spending creates an additional 3,500 jobs in the state.

Long-Term Economic Impacts

- UAF ranks among the top 100 research institutions in the U.S., making it highly competitive for external research grants;
- Through the Tanana Valley Campus Downtown Center, UAF provides vocational and technical training to students who wish to upgrade their job skills;
- UAF is the only doctoral degree-granting institution of the University of Alaska system.

For more information see *University of Alaska Fairbanks—Meeting the Challenges*.

THE UNIVERSITY OF ARIZONA

With its 11 colleges, 35,000 students, and more than 150 buildings on 340 acres, the University of Arizona has a significant economic impact on its region and the state.

Direct Economic Impacts, 1991

- The total employment impact of the university, direct and indirect, was almost 38,000 jobs, almost 12 percent of local employment in its home county;
- The combined wage impact in the Tucson area of University spending, student spending and visitor spending was almost $690 million;
- The combined impact on sales due to the university was $1.5 billion—for every dollar the university received in state funds and student tuition/fees it generated another $1.08 in grants, contracts, sponsored projects, and gifts from federal or private sources.

Long-Term Economic Impacts

- Higher education means a healthier local and state economy, in part because college graduates earn comparatively higher incomes that persons who do not attend college.

The 74,000 University of Arizona alumni in Arizona create a substantial impact.

For more information, see "The University of Arizona: A Vast Resource for Fueling Pima County's Economy."

UNIVERSITY OF CALIFORNIA, BERKELEY

The University of California at Berkeley ranks as one of the world's leading intellectual centers. It is renowned for the size and quality of its libraries and laboratories, the scope of research and publications, and its distinguished faculty and student body. It also plays an integral role in the health, welfare, and economic well being of the East Bay area and the state of California.

Direct Economic Impacts

- For every $1 of state support, the university generates an additional $1.68 from other sources such as research grants and private gifts, contracts, and grants;
- One of the largest employers in the Bay Area, the university employs 18,000 full-and part-time employees;
- Based on direct expenditures, the university has an annual economic impact on the region and the state of more than $1 billion.

Long-Term Economic Impacts

- The university has played a vital role in the development of Silicon Valley, birthplace of the California computer industry. Berkeley alumni have co-founded some of the largest Silicon Valley companies, including Intel Corporation, Apple Computer, Sun Microsystems, which collectively generate more than $12 billion in annual sales;
- California's first biotechnology company, Cetus, was formed in 1971 by Donald Glaser, Berkeley professor and Nobel laureate. Cetus merged with Chiron Corporation, co-founded by Berkeley professor Edward Penhoet. Chiron has 6,000 employees and annual sales of $454 million;
- The university helped found and leads the University-Oakland Metropolitan Forum, a distinctive institution mobilizing faculty and student resources to assist community organizations and the City of Oakland in support of economic development, education reform, neighborhood revitalization and other critical efforts.

For more information see *Cal Today*, February 1996.

UNIVERSITY OF CALIFORNIA, IRVINE

The University of California at Irvine is recognized and respected widely for its excellence in teaching, research, and public service. The university is also a major center of activity contributing greatly to the economy of Irvine, range County, and the Southern California region.

Direct Economic Impacts in 1994

- The university paid vendors $188 million for goods and services of which 23 percent—$44 million—was paid to Orange county vendors;
- The university employed 11,795 people, making it the largest employer in Irvine and the third largest in Orange County;
- Estimated expenditures by students were over $102 million.

Long-Term Economic Impacts

- Orange Country's high-tech/bio-tech industrial base is anchored by the research and educational facilities of UC Irvine. UCI's campus has a history of innovation in business and stands out as a global center for the transfer and advancement of new technologies needed to propel the local economy;
- As part of a visionary plan that will solidify the university as a central resource for health sciences research, the university broke ground for the University of California Irvine Center for Health Sciences in 1995. The interdisciplinary research facility will house both academic and commercial researchers and will foster the

development and transfer of medical research into marketable drugs and devices for the diagnosis and treatment of disease;

- The university fosters partnerships between the business community and the university, such as the Chief Executive Roundtable through which 50 of Orange County's top executives act as external advisors and supporters to the university and identify links for increased strategic alliances among businesses and the university.

For more information see *The Economic Impact of the University of California at Irvine on Orange Country*

UNIVERSITY OF CALIFORNIA, RIVERSIDE

The University of California, Riverside is comprised of 6 colleges with an enrollment of 8,590. As an institution and through expenditures made by students the university has a direct economic impact on the economy of Riverside and Southern California.

Direct Economic Impacts

- The university had a direct economic impact of $342.9 million on the economy of Riverside and Southern California;
- The university employed 4,972 making it the second largest employer in the City of Riverside;
- The university purchased $40.5 million in products and services.

Long-Term Economic Impacts

- Through the University's Career Services Intern Program more than 56,300 hours of community service were provided by the university;
- Six to ten university student fellows per year teach in area public schools through the Community Teaching Fellowship Program;
- The university's Adopt-a-School activities help local public schools fill in budget gaps;
- The university extension makes available extensive offerings on economic development and public policy programs.

For more information see *University of California at Riverside's Economic Impact Pamphlet*

UNIVERSITY OF CALIFORNIA, SAN DIEGO

The University of California, San Diego's academic excellence and community outreach have long played a major and expanding role in the city's evolution. Strong links between academia and industry have produced in San Diego not just new businesses, but entire industries in fields such as biotechnology and telecommunications.

Direct Economic Impacts

- For each $1 the state of California invests in the university, the university generates $4 more;
- University expenditures totaled $935.1 million;
- The university attracted an estimated $730 million from outside the San Diego region and channeled it into the local economy;
- The university is the region's third-largest employer with 5,000 academic employees and 13,000 staff employees;
- University students spend an estimated $58 million in the San Diego area;
- $17.3 million in income taxes to the state of California were paid by university employees with an additional $3.2 million collected in local and state sales taxes.

Long-Term Economic Impacts

In addition to these direct economic benefits, the University of California, San Diego provides a wide range of long-term benefits to the local and state economies. These include:

- The university's CONNECT Program in Technology and Entrepreneurship is one of the most powerful community-based engines for economic development in the nation. In 1994, the program linked more than 400 high-tech

entrepreneurs with financial, technical, and managerial resources. In addition the program plays an active role in several local defense conversion initiatives including the San Diego Regional Technology Alliance and the Defense Conversion Partnership;

- The university leads a University of California systemwide effort to jump-start manufacturing modernization throughout the state. The experimental Manufacturing Extension Program assesses the technical and management needs of California industry and matches companies with appropriate resources;
- The university's Technology Transfer Office works with scientists and companies to help transfer knowledge from the research lab, the engineers workstation, or the cancer researcher's microscope to the private sector;
- Close to fifty companies in San Diego can trace their roots to the university. These firms are either based on the university's technology, founded by university faculty or staff, or spun off from a company that had ties to the campus.

For more information see *Economic Impact—San Diego and UC San Diego: An Enterprising Partnership.*

COLORADO STATE UNIVERSITY

Founded in 1870, Colorado State University is a land-grant institution with a three pronged mission of teaching, research, and service. The university serves the people of Colorado through instruction in 78 academic majors offered in 8 colleges and 56 departments and is closely connected to the surrounding communities of Fort Collins and Larimer County and to the state as a whole.

Direct Economic Impacts in 1992

- Colorado State University's direct spending was nearly 4 times the amount the University received from the state in funding;
- University employees, students, and visitors directly spent an estimated $344.55 million in Colorado of which $92.6 million were on purchases outside the university. Larimer County vendors received 29.7 percent of the payments, with Colorado vendors receiving 56 percent;
- CSU has 4,900 full-time employees as well as 4,600 part-time or hourly employees;
- University students, employees, and visitors paid $14.08 million in state and local taxes;
- For every state dollar invested in the university, Colorado State generated an additional $2.61 from gifts, research grants, and contracts for its operating revenue.

Long-Term Economic Impacts

Beyond its direct economic impact, Colorado State University offers a broad range of programs, community and educational services, technical and special assistance, cultural events, and volunteer/charitable contributions that provide long-term benefits to the community and state at large.

- The university runs over 70 centers and institutes that local residents can turn to for information and assistance;
- The university provides a variety of ongoing educational opportunities to local residents through its Division of Continuing Education and Cooperative Extension;
- The university's Community Service Office connects 6,000 students with volunteer and service-learning positions throughout the community to meet the real needs of the community while providing learning experiences for participating students.

For more information see *Economic Connections to Fort Collins, Larimer County, and the State of Colorado.*

MONTANA STATE UNIVERSITY-BOZEMAN

Montana State University is an economic engine for Montana and the largest employer in Montana's Gallatin Valley.

Direct Economic Impacts in 1994

- For every dollar of state funds appropriated to MSU, the campus generates an additional $1.74 from other sources;
- The university's purchases in Montana supported over 1600 jobs in the state in addition to the 2100 regular MSU employees;
- The university's total economic impact on the state was $141.4 million.

Long-Term Economic Impacts

- Research funding has fostered many partnerships between faculty, students and Montana businesses, and faculty research has resulted in new products and processes;
- Thirty-five high-tech firms have sprouted up in Montana, all with ties to university research, that signal new directions in the state's economy;
- MSU holds 17 patents on products and processes with economic promise and has 40 research agreements with Montana companies working on new ideas that will boost competitiveness.

For more information, see *An Economic Partnership, MSU-Bozeman's Impact on Montana*.

UNIVERSITY OF TEXAS AT ARLINGTON

The University of Texas at Arlington is a major comprehensive teaching, research, and public service institution located in the heart of the Dallas-Fort Worth Metroplex.

Direct Economic Impacts

- The university's operating budget of $18.9 million plus student spending of $215.1 million produced a total of $363.9 million in direct economic activity;
- Each dollar spent at a Texas public university generates $2.929 in direct and indirect economic activity. The University of Texas at Arlington's $363.9 million in direct activity resulted in a total economic activity of $1,066 billion;
- The university employs 3,263 faculty and staff and through related activities throughout the state generates a total of 9,178 jobs for Texas;
- The university brought into Texas $7.4 million in research and development funds from the federal government and other outside sources.

Long-Term Economic Impacts

Universities provide many quality-of-life benefits that have long-term impact on the regional and state economies. The University of Texas at Arlington's contributions in this arena include:

- The university has established a productive partnership with area businesses and industry through innovative student employment programs and state-of-the-art facilities, such as its Automation and Robotics Research Institute located on the Riverbend campus in East Fort Worth;
- The university's Small Business Institute provides a supportive atmosphere for new companies and gives students practical experience;
- The university's Energy Systems Research Center, with support from the power industry, is building a unique power system simulator which will enable researchers to create numerous situations including different blackout scenarios.

For more information see *Adaptation of Economic Contributions of the University of Texas Systems* by the University of Texas at Arlington's News Service.

UNIVERSITY OF WASHINGTON

The University of Washington includes 16 colleges with an enrollment of 33,719 and is the state's largest university. In fiscal year 1993, the university played a key role in the state's economic development through its spending, employment, and research activities.

Direct Economic Impacts

- Statewide economic activity generated by the university totaled $2.8 billion, more than 10 times the state's net investment in the university budget;
- Even though the university is a state university, only 23 percent of its 1993 budget came from state funding;
- University activities and expenditures produced more than 35,000 Washington jobs in addition to the university's own workforce;
- The university attracted $431 million from outside the state to support its programs;
- The university's expenditures produced $113 million in tax revenues for the state of Washington.

Long-Term Economic Impacts

Another way in which the university benefits the state is through the impact of its research and transfer of technology to industry. For example:

- In the past twenty years, 38 new companies have been formed to commercialize university developed technology, and the rate of new-company formation has accelerated dramatically in the last few years;
- Altogether, university-related start-up companies generate about 3,500 jobs, and annual sales ranges from $50,000 to $30,000 million;
- As of fiscal year 1993, the university had 175 technologies licensed to companies generating $8.9 million of income for the university.

For more information see *The Return on an Investment in Education—University of Washington.*

GROUPS OF UNIVERSITIES AND UNIVERSITY SYSTEMS

UNIVERSITY OF CALIFORNIA

The University of California, a nine campus system, and the state have evolved together: the vitality of one is inextricably linked to the other. The state provides core support for the university's missions; in return, the university brings in billions of dollars in non-state funding, reinvesting this money in California, primarily through research, which leads to new technologies, new products, and jobs.

Direct Economic Impacts

- For every $1 the state invests in the university system, the system raises another $3, a 300 percent return on the initial investment;
- In 1993–1994, the university system spent $2.8 billion on goods and services, much of which went to local businesses;
- For many communities, a University of California campus is either the largest, or one of the largest employers in the region. Statewide, the university employs 130,000 people, spending $3.8 billion a year on wages and salaries;
- In 1993–1994, university employees and retirees paid $144 million in state taxes.

Long-Term Economic Impacts

- Fostering new business: University of California scientists founded three of the nation's top biotechnology companies, which collectively account for nearly half of the industry's $7.7 billion annual sales and employ 7,000 people in California—nearly 12,000 worldwide;
- Developing new technologies: Lawrence Livermore Labs helped create 30 spin-off companies, one of which, Valid Logic Systems, spawned the $1.4 billion computer-aide engineering industry;
- Encouraging innovation: Computer companies founded by former university students or faculty include Intel Corporation, Apple

Computer, Sun Microsystems, and Santa Cruz Operations;

- Bringing innovations to the marketplace: The University Microelectronics Innovation and Computer Research Opportunities program links industry sponsors with university faculty and graduate students in electronics and computer technology. Similarly, UC Connect links high-technology entrepreneurs with financial, technical, and managerial resources on campus and in the community;
- Helping agriculture thrive: The staff of the university's Cooperative Extension in each of California's 58 counties provide numerous services from growing to marketing specialty crops. Their advice has helped small scale farming becoming a $1-billion industry in California;
- Saving lives: Some of the medical advances we now take for granted are products of pioneering research by university scientists.

For more information see *UC Means Business*.

THE UNIVERSITY OF COLORADO

The University of Colorado, with campuses at Boulder, Colorado Springs, downtown Denver, and the Health Sciences Center, also in Denver, makes a significant contribution to the economic vitality of Colorado.

Direct Economic Impacts in 1994

- Only 6.3 percent of the $1 billion in total resources available to the university was in the form of state appropriations;
- CU generates some 36,000 jobs in Colorado, about 2 percent of total employment in the state;
- The university spends about $227 million in Colorado on operating expenses;
- About $93 million travel dollars spent in Colorado were generated by university visitors, employees, and students;
- Students spend almost $720 million in the state;
- CU's direct expenditures of slightly over $1 billion translate into about $1.92 billion in incremental Gross State Product.

Long-Term Economic Impacts

- University professors and other research scientists develop new, often patentable, technologies. In 1994, the Office of Intellectual Resources and Technology Transfer generated $2 million in royalty licensing and income. CU holds an equity position in nine private companies in Colorado, the direct result of technology transfer;
- The location of a number of major federal scientific installations in Colorado is due to the presence of the university. In 1995, five of the facilities accounted for 3,300 jobs in Colorado.

For more information see *The University of Colorado: A Sound Investment in Colorado, Economic Impact Summary, 1995*.

TEXAS A&M UNIVERSITY

In 1994, Texas A&M and other members of the Texas A&M University System based in Bryan/College Station, provided an estimated $572 million of direct economic impact to the region. In 1995, that impact grew to $579 million.

Direct Economic Impacts in 1994

- Texas A&M employed approximately 19,100 permanent and part-time employees who live in the Bryan/College Station area;
- The university received $302.6 million in external research grants and contracts;
- Students spent approximately $164 million with an additional estimated $25.4 million spending attributed to campus visitors;

For more information see *Feb. 7, 1995 Press Release, Office of University Relations, Texas A&M University* and "Texas A&M's Economic Impact on Area Reaches $579 Million," *Bryan-College Station Eagle*, March 3, 1996.

THE UNIVERSITY OF TEXAS SYSTEM

The University of Texas System and its 15 component institutions serve a fundamental educational purpose. These institutions also have a profound direct and long-term impact on the economy of Texas.

Direct Economic Impacts

- The university system's operating budget of $3.7 billion plus student spending of $1.6 billion produced a total of $5.3 billion in direct economic activity for the state;
- Every dollar spent at a Texas public university generated 2.929 dollars in direct and long-term economic activity;
- The university system employed 56,000 faculty and staff, equaling 2.1 percent of the state's total non-agricultural jobs;
- The university system brought in $659 million in research and development funds from the federal government and other outside sources.

Long-Term Economic Impacts

- The university system is active in transferring new technologies and processes from the university laboratory to the marketplace. Research conducted at the university system institutions has provided innovations that are the basis for numerous start-up companies in Texas—in fields such as automated manufacturing, medical devices, and energy.

For more information see *The Economic Impact of the University of Texas System.*

SUPPLEMENTARY REPORTS

NASULGC institutions have produced a wide range of valuable reports outlining their role in the economic growth of their individual states or regions, in addition to the impact statements that are the focus of this report. The following is a list of such reports submitted by universities for this project. Though these reports did not contain the specific data needed for the economic impact summaries compiled in this document, nevertheless, they present much useful information about the public universities' contributions.

THE UNIVERSITY OF ALABAMA IN HUNTSVILLE
Role in Transferring Federal Technology to Modernize the Alabama Economy

UNIVERSITY OF CONNECTICUT
President Hartley's Five Year Report (1995)

DELAWARE STATE UNIVERSITY
Letter from Vice President for Institutional Advancement, William Tromble (1995)

UNIVERSITY OF MAINE
Economic Development in Maine: Strategies and Opportunities (1994)

Higher Education: Maine and the Nation (1995)

UNIVERSITY OF MASSACHUSETTS
Choosing To Compete: A Statewide Strategy for Job Creation and Economic Growth (1993)

Partners in the New Economy (1994)

Business Climate and Megaplex: A Survey of Voter Attitudes (1995)

UNIVERSITY OF MINNESOTA
Products of An Unheralded Industry (1993)

NEW JERSEY STATE COLLEGE GOVERNING BOARDS ASSOCIATION
A New Decade of Leadership and Service: Annual Report and Ten-Year Pictorial (1994–1995)

OKLAHOMA STATE REGENTS FOR HIGHER EDUCATION
Economic Impacts of Higher Education on the Oklahoma Economy (1995)

PENNSYLVANIA INDEPENDENT COLLEGE & UNIVERSITY RESEARCH CENTER
Higher Education Participation: The Key to Achieving a Commonwealth of Opportunity (1991)

PENNSYLVANIA STATE UNIVERSITY
University plays major role in state's economy (1995)

UNIVERSITY OF UTAH
Research & Enterprise: The University and New Industry (1994)

UNIVERSITY OF UTAH HEALTH SCIENCES CENTER
Economic Impact Study (1993–1994)

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